User's Manual

Protector® Series
Evidence Drying Cabinets

Models

3400000
3400001
3400002
3400003
3400004
3400010

To receive important product updates, complete your product registration card online at **register.labconco.com**

Protecting your laboratory environment
LABCONCO®

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The United States Interstate Commerce Commission rules require that claims be filed with the delivery carrier within fifteen (15) days of delivery.

Limitation of Liability

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Contacting Labconco Corporation

If you have questions that are not addressed in this manual, or if you need technical assistance, contact Labconco's Customer Service Department or Labconco's Product Service Department at 1-800-821-5525 or 1-816-333-8811, between the hours of 7:00 a.m. and 6:00 p.m., Central Standard Time.

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Chapter 1: Introduction

Congratulations on the purchase of a Labconco Protector Evidence Drying Cabinet. The cabinet is designed to protect you, and the room environment from biohazardous aerosols and offensive odors while drying evidence. The Protector Series cabinet is the result of years of experience in manufacturing laboratory equipment, and users like you suggested many of its features to us.

The Evidence Drying cabinet models offer many unique features to enhance performance and flexibility. To take full advantage of them, please acquaint yourself with this manual and keep it handy for future reference. If you are unfamiliar with how evidence drying cabinets operate, please review Chapter 4: Performance Features and Safety Precautions before you begin using the cabinet. Even if you are an experienced cabinet user, please review *Chapter 5: Using the Cabinet*; it describes the cabinet's features so that you can use it efficiently.

This manual and other technical information is available in PDF format at our website: www.labconco.com.

Chapter 2: Prerequisites

Before you install the evidence drying cabinet, you need to plan the site for installation. Examine the location where you intend to install the cabinet. You must be certain that the area is level and of solid construction. In addition, a source of electrical power must be located near the installation site.

Carefully read this chapter to learn:

- Location requirements.
- Electrical power requirements.
- Exhaust requirements.
- Service utility requirements.
- Space requirements.
- Drain requirements.
- Water Supply Requirements (Model #3410010 Only)

Refer to Appendix C: Specifications, for complete cabinet electrical and environmental conditions, specifications and requirements.

Space Requirements

The dimensions for the evidence drying cabinet are shown in Appendix B: Dimensions.

Clearance

A minimum clearance of at least 6 inches (150 mm) is suggested on the top of the cabinet for service. There should be 36 inches (914 mm) clearance at the front of the cabinet to allow the door to swing open without hitting any obstructions.

Location Requirements

Note: The cabinet is equipped with locking casters to ease installation and maintenance. It should be located on a flat floor for proper cabinet alignment and door operation.

Exhaust Requirements

If you intend to connect the cabinet to the optional Exhaust Connection Kit, first examine the location to ensure that it accommodates the cabinet's exhaust duct. The area directly above the cabinet's exhaust port should be clear of structural elements, water and utility lines, or other fixed obstructions. There should be enough clearance to accommodate a 5-inch diameter duct. For further information about the cabinet's exhaust system requirements, please refer to Appendix D: Accessories.

Electrical Requirements

The evidence drying cabinet models have the following electrical requirements:

Table 2-1

Model #	Requirements
34000-00, -10	115 VAC, 60 Hz, 6 Amps
34000-01, 20, 03,-04	230 VAC, 50/60 Hz, 3 Amps

Note: An outlet with a circuit breaker rated at 10 amps for 115 volt models (5 amps for 230 volt models) should be located as close as possible to the right rear side of the cabinet. Power cords supplied with the Evidence Drying cabinet are 3 meters (10 feet) long.

Drain Requirements

If you intend to connect the optional drain kit, or if you have Model #3400010, you will need to have the Evidence Drying Cabinet within 6 feet (1.8m) of a suitable floor drain.

Note: The floor drain must be located below the level of the drain hose exiting the cabinet for all models, even the drain pump-equipped model #3400010. This will allow complete drainage of the system during wash down operations. The cabinet and floor drain should be located in an area <u>not</u> subject to freezing temperatures.

Water Supply Requirements (# 3410010 only)

If you intend to connect the water supply to wash down the cabinet, locate the cabinet within 6 feet (1.8 m) of a domestic water line, equipped with a water shut off valve ending in a 3/4–inch male garden hose connector. Water system pressure should be 10-40 PSIG (0.7-2.8 Bar).

Chapter 3:
Getting Started

Now that the installation site is properly planned, you are ready to inspect and install the Protector evidence drying cabinet. This chapter covers how to:

- Unpack and move the cabinet.
- Install the cabinet.
- Connect the electrical supply source.

Tools required for installation the cabinet include two 1/2" wrenches, a flat-blade screwdriver, a #2 Phillips screwdriver, scissors, or a box knife.

Note: The cabinet weighs approximately 300 lbs. (136 kg). The shipping pallet allows for lifting with a mechanical lift truck or floor jack. If you must lift the product manually, use at least six (6) persons and follow safe-lifting guidelines.

Unpacking the Cabinet

Carefully remove the outer carton and inspect the cabinet for damage that may have occurred in transit. If the cabinet is damaged, notify the delivery carrier immediately and retain the entire shipment intact for inspection by the carrier.

Note: United States Interstate Commerce Commission rules require that claims be filed with the delivery carrier within fifteen (15) days of delivery.

Do not return goods without the prior authorization of Labconco. Unauthorized returns will not be accepted.

If the cabinet was damaged in transit, you must file a claim directly with the freight carrier. Labconco Corporation and its dealers are not responsible for shipping damages.

Do not discard the carton or packing material for the cabinet until all of the components have been checked, installed and tested.

The cabinet is secured to the pallet using four transport brackets, two on each side. To remove the brackets, do the following:

1. Using the ½-inch wrenches, loosen and remove the bolts and locknuts that secure the brackets to the pallet.
2. Using a ½-inch wrench, loosen and remove the nuts and bolts securing the transport brackets to the bottom of the cabinet.
3. Discard the brackets, shipping nuts and bolts.

The cabinet is now ready to be removed from the pallet.

NOTE: A ramp has been provided attached to the wood pallet. Follow the instructions on the face of the cabinet for safe removal.

Moving the Cabinet

When moving the cabinet on its casters, DO NOT push on the front or back of the unit. Move the cabinet by pushing or pulling it sideways. This will minimize the possibility of the unit overturning when in motion.

Attaching the Cabinet to the Wall

WARNING: The evidence drying cabinet must be secured to a wall stud, or other suitable wall structure, using the included strap and bracket. This will minimize the possibility of the unit overturning when in use.

1. Remove the wall bracket secured to the strap, located on the back of the unit on top.

2. Locate a stud inside the wall directly behind the cabinet's installation location.

NOTE: The screws provided with the wall bracket are intended to be used when attaching the bracket to a wooden wall stud. If your wall is made of different materials (cinder block, concrete, etc.), you will need to attach the wall bracket to the wall using an anchor or fastener approved for that type of construction.

3. Position the bracket, centered on the stud, with the top of the strap slot 79 inches above the floor. Mark the top of each screw hole, as shown in Figure 3-1.

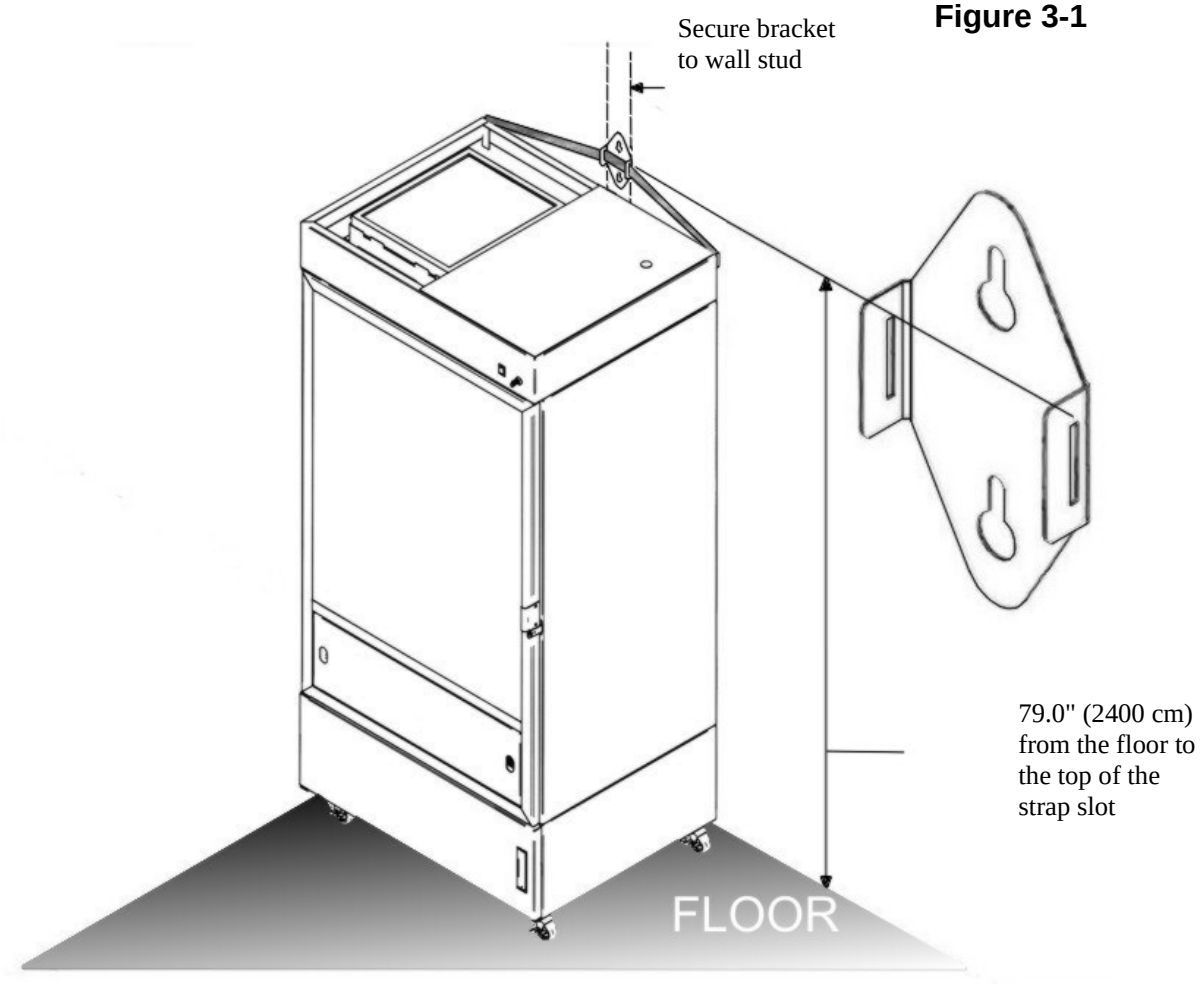
4. Using a 1/8" (3 mm) drill, drill pilot holes at both marked locations to a depth of at least 1-½ inches (38 mm).

5. Using a #3 Phillips screwdriver, tighten both bracket screws until the bracket is secured to the wall.

6. Thread the strap through both bracket slots, and then through both slots located at the top corners on the rear of the cabinet.

7. Push the cabinet back into its final location, and then tighten the strap until there is minimal slack in the strap.

Figure 3-1


Secure bracket
to wall stud
79.0" (2400 cm)
from the floor to
the top of the
strap slot
FLOOR

Drain Options (Model #s 34000-00, thru -04)

NOTE: These models can either drain to a bucket, already located in the lower storage area, or the bucket can be removed, and an optional Drain Kit (#3928200) can be installed. The optional drain kit allows the cabinet to drain to a nearby floor drain.

On units equipped with the drain bucket:

NOTE: The drain bucket had a working capacity of approximately 1.5 gallons. Periodically monitor the liquid level in the bucket during decontamination or washdown operations.

1. Access the bucket by opening the bottom storage area door on the front of the cabinet.

2. Before using, ensure the bucket is in its correct position under the drain.

To install the Drain Kit (#3928200):

NOTE: The drain line should be routed to a floor drain with an air gap only. NEVER directly connect the drain line to a sewer or drain system, or use a stand pipe, to prevent backflow into the cabinet.

1. Remove the bucket from the lower storage area and save for possible reuse.

2. Connect the drain hose assembly to the tail pipe of the drain (on the bottom of the drain assembly). Push the drain assembly up onto the stand pipe until it is fully seated.

3. Hand-tighten the compression ring of the drain assembly to the tail pipe until it is secure.

4. Route the drain hose through the appropriate hole in the bottom rear panel of the cabinet.

5. Route the drain hose to the floor drain and secure the end of the hose to prevent it from moving.

6. Pour water into the cabinet drain, and inspect the entire drain system for leaks. Tighten any leaking fittings.

Drain Options (Model # 3400010 only)

NOTE: This model is designed to have its drain hose routed to a nearby floor drain.

To install the drain hose assembly:

NOTE: The drain line should be routed to a floor drain with an air gap only. NEVER directly connect the drain line to a sewer or drain system, or use a stand pipe, to prevent backflow into the cabinet.

1. Remove the packing materials securing the hose to the back of the cabinet.

2. Route the drain hose to the floor drain and secure the end of the hose to prevent it from moving.

Water Supply Connection (# 3410010 only)

NOTE: This model has a cabinet water shut off valve located behind the lower front door. The valve should be in the "off" position whenever the unit is not being washed down.

1. Connect the water supply hose (the stainless steel braided hose) to a domestic water line, equipped with a shut off valve, and ending in a 3/4–inch male garden hose connector.

2. Ensure the water supply valve is in the "off" position.

3. Slowly open the water line shut off valve.

4. Check the cabinet's water supply hose for leaks.

5. Slowly open the cabinet shut off valve, and check again for leaks.

6. Set the spray gun nozzle to "shower" and slowly pull the trigger.

7. When water flows steadily from the gun, the cabinet shut off valve can then be turned to the "off" position.

Preparing the Evidence Drying Cabinet for Operation

After the evidence drying cabinet has been removed from its pallet and positioned in its final location, you must:

1. Remove the tie and/or tape securing the door, the lower storage area door, and the filters on top of the unit.

Note: The following are located in a box in the lower storage space:

- **User's Manual**
- **UV Security Lock Key(s) (model #s 34000-00, -04 only)**
- **Power Cord**
- **Product Registration Card**

If you did not receive one or more of the components listed for the cabinet, or if any of the components are damaged, contact Labconco Corporation immediately for further instructions.

2. Using a step ladder, remove the tape and/or packaging material around the top of the unit.

3. Plug the power cord into the back of the cabinet, and then into an appropriate outlet. Install the Key into the UV Security lock on the upper panel on those models equipped with a UV light.

Initial Operation

Prior to use with evidence, you should perform the following operational tests to ensure the cabinet is operating properly:

- Airflow Smoke Pattern Test

  ✓ With the cabinet fan ON, introduce smoke (from a cigarette, chemical smoke stick, etc.) into the prefilter at the bottom of the door. The smoke should flow directly into the cabinet, and then into the upper prefilter located at the top of the cabinet liner. The smoke should move from the door to the intake prefilter in approximately 5 seconds or less. If the smoke does not flow as described, see the "Adjusting the Fan Speed" section of Chapter 6.

- UV Light and Interlock Tests

  ✓ With the door closed, turn the "Fan/UV Light" switch to "UV" and the "UV Security Keylock to "ON". The UV light will then turn on. Open the door, and the UV light will turn off. Close the door, and the UV light should relight. Turn the UV Security Keylock to the "OFF" position, and the UV light will turn off. If the UV light does not work as described, call Labconco's Product Service Department at 1-800-522-7658 or 816-333-8811.

- Spray Gun and Drain Pump and Tests (Model # 3400010 only)

  ✓ Open the cabinet door, and ensure that the drain strainer is in place. Open the lower door, and turn the cabinet water supply valve on. Use the spray gun in the "Shower" setting, ensuring proper operation. Turn the gun and cabinet supply valve off. Push the control switch to the "Drain Pump" position. The majority of water should be pumped out of the cabinet and to the floor drain. Some water may remain in the bottom of the cabinet due to surface tension or the floor not being level. In this case, use a small squeegee or sponge to direct the remaining water to the drain. Shut off the drain pump when finished.

Chapter 4: Performance Features and Safety Precautions

The Protector evidence drying cabinet operates using the following principles:

- Directional airflow.
- Prefiltration of large particulates by an inlet prefilter (in the door) and an exhaust prefilter (in the top of the liner).
- Filtration and retention of particulates by a High Efficiency Particulate Air (HEPA) filter.
- Adsorption of organic (odorous) chemicals by a granular activated carbon filter.

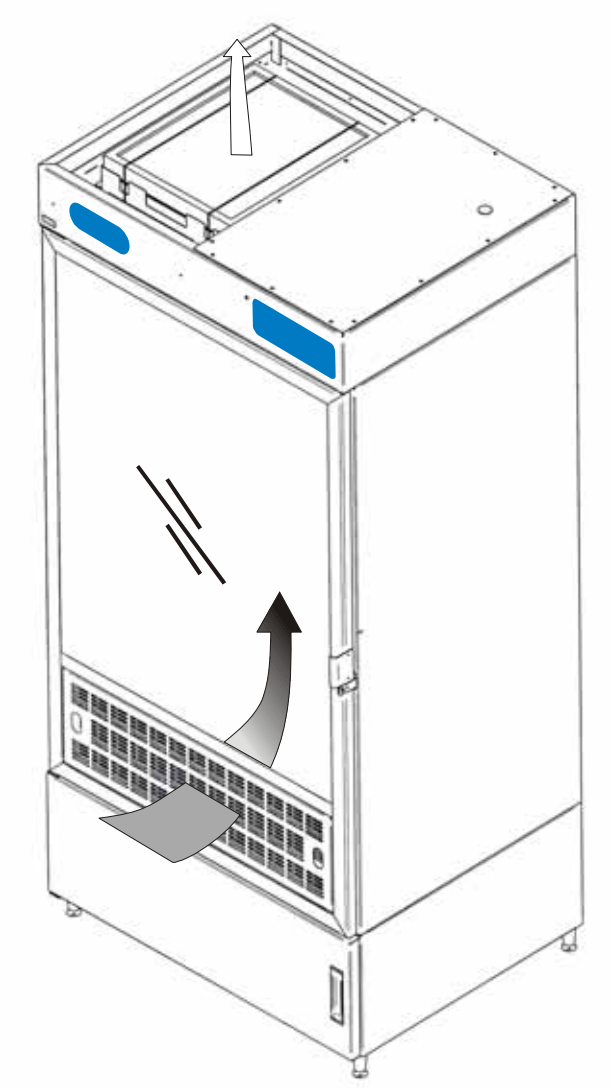
The major components in the cabinet are:

- The prefilters
- The blower to force air through the cabinet
- The HEPA filter
- The granular activated carbon filter

Directional Airflow

Directional airflow plays a critical role in evidence drying cabinet performance. Air is drawn into the inlet prefilter, located on the bottom of the door. The filtered air then flows upward through the liner, passing over the evidence to be dried. Before leaving the liner, the air then passes through the exhaust prefilter, that is designed to protect the HEPA filter from large particulates, and may be removed to examine it for the collection of evidence. The air is pressurized by the blower, and then forced through the HEPA and carbon filters, to remove biohazardous particulates and odorous chemicals, respectively. This is illustrated in Figure 4-1.

Figure 4-1



Room Air HEPA-filtered Air Contaminated Air

Prefilters

Both the door prefilter (located on the front of the door) and cabinet prefilter (located on the inside top of the liner) are disposable, polyester loft particulate filters. Both filters have a Minimum Efficiency Reporting Value (MERV) of 11, meaning they remove 65-79% of particles 1.0-3.0 microns in size, and more than 85% of particles 3.0-10 microns in size. See Appendix A for reorder part numbers.

HEPA Filters

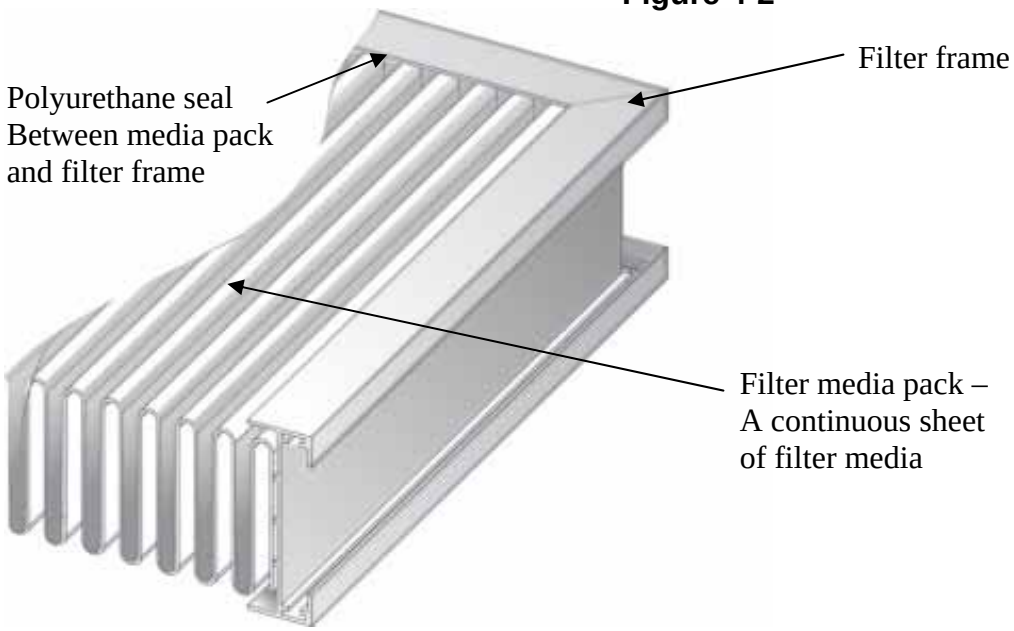
HEPA filters are disposable, dry-type particulate filters. The filter material or media is typically made of borosilicate microfibers formed into a thin sheet, in a process similar to the production of paper. This sheet is folded, or pleated to increase its surface area. The pleats are held in place by aluminum diffusers or by beads of glue that add rigidity to the media pack. The pack is then set into a frame, and sealed as shown in Figure 4-2.

The HEPA filter manufacturer establishes the efficiency of the filter by challenging it with an aerosol of known particle size. The number of particles that penetrate the filter are quantified, and this establishes the efficiency of the filter. The filters used in the evidence drying cabinets are at least 99.99% efficient in removing particles 0.3 micron.

Note: **The HEPA filter media is very fragile. DO NOT touch the media. If you think the media of a HEPA filter is damaged, DO NOT USE THE CABINET.** Call Labconco's Product Service Department at 1-800-522-7658 or 816-333-8811.

Note: HEPA Filters are only effective against particulate material. Gases will pass through the filter.

Figure 4-2



Blower

The blower assembly pulls room air into the intake prefilter on the front of the door, through the liner and exhaust prefilter, and then forces it through the HEPA and granular activated carbon filter. The evidence drying cabinet uses a motorized, backward curved fan for quiet, energy efficient operation.

Cabinet Air Intake and Exhaust

In order to operate properly, the air intake at the bottom of the door, the exhaust prefilter area in the top of the liner, and the top surface of the activated carbon filter must be unobstructed. Blocking or restricting any of these areas, or allowing the prefilters to become excessively loaded with dust can adversely affect the performance of the cabinet.

Ultraviolet (UV) Lamp (Models 34000-00 thru -04)

The optional UV lamp generates a primary wavelength of light of 254nm. A secondary emission is in the visible (blue) wavelength, resulting in the characteristic blue color while operating. UV light with a wavelength of 254 nm is biocidal, primarily by creating thymine dimers in DNA. These dimers prevent the correct transcription of the DNA into RNA, resulting in cellular death or viral inactivation. In order to be effective, the UV light must directly strike the nucleic acid, and its effectiveness can be diminished or negated by dissolved proteins or metals, or by other UV-opaque substances protecting the target nucleic acid.

Because of its limitations, UV light should be used as an adjunct to good surface disinfection practices. In order to get optimum performance from the UV light, it should be replaced after 6,000 hours of operation or less, and the exterior surface of the lamp should be kept clean and free of dust.

Note: UV irradiation is absorbed by the tempered safety glass of the door. Independent research has shown that the level of UV irradiation on the outside of the cabinet’s door is equal to background radiation levels.

Note: The UV sensitivity of a target organism varies, depending on the UV output of the lamp, the genus and species of the organism, the medium the agent is suspended in, etc. Contact the Health and Safety Officer at your facility for UV light use and recommendations.

Safety Precautions

For models 3400010 only:

DO NOT directly connect the drain line to a sewer, drain system or place in a vertical standpipe.

DO NOT use the wash down gun to clean up biohazardous material; Disinfect any surface or material BEFORE using the gun.

ALWAYS wear appropriate personal protective equipment, including eye and face protection when washing down the cabinet.

Ensure that the drain line is not kinked or obstructed, and flows to a floor drain with an air gap.

The Drain Pump should only be operated to remove standing liquid in the bottom of the cabinet.

Do not operate the pump dry for more than 5 minutes.

For models 34000 -00 thru -04 only:

NEVER expose ANY EVIDENCE, plastic or coated materials to ultraviolet (UV) radiation. Never bypass the UV safety interlock that only allows the UV light to work when the door is closed. UV exposure to the skin is hazardous and can result in serious eye or skin injury.

For all models:

Ensure that the cabinet is connected to electrical service in accordance with local and national electrical codes. Failure to do so may create a fire or electrical hazard. Do not remove or service any electrical components without first disconnecting the cabinet from electrical service.

NEVER use this cabinet as a chemical storage cabinet.

When handling evidence, or working in the cabinet, always wear appropriate personnel protective equipment.

NEVER attempt to dry evidence containing flammable gases or solvents in the cabinet. An open flame should NOT be used in the cabinet.

HEPA filters only remove particulate matter. Operations generating volatile toxic chemicals are prohibited. The media of the filter is fragile and should not be touched. Avoid puncturing the HEPA filter during installation or normal operation. If you suspect that a HEPA filter has been damaged, DO NOT use the cabinet; contact Labconco at 800-821-5525 or 816-333-8811 for further information.

The HEPA filters in the cabinet will gradually accumulate airborne particulate matter from the items placed in the cabinet. The rate of accumulation will depend upon the cleanliness of the air, operating time and the nature of items being dried in the cabinet.

Do not operate the cabinet without all of the appropriate filters in place. If an odor is detected coming out of the granular activated carbon, it needs to be replaced.

The weight limit for the fold down shelves is 15 lbs (6.8 kg), and the floor of the cabinet and lower storage area is 20 lbs (9.1 kg).

When surface disinfecting the cabinet:

- Always wear appropriate personnel protective equipment.
- NEVER use high pressure water to clean the liner; this practice could generate biohazardous aerosols.
- NEVER spray disinfectants into the blower intake at the top of the liner; this may damage the blower.
- Avoid splashing the disinfecting solution on skin or clothing.
- Ensure adequate room ventilation.
- Carefully follow the disinfectant's safety instructions.
- Always dispose of disinfecting solutions in accordance with local and national laws.
- DO NOT allow bleach or disinfectants with high concentrations of free chlorine to contact the stainless steel components of the cabinet for a long period of time. Free chlorine will corrode stainless steel after extended contact.

When handling used filters or prefilters, always wear appropriate personnel protective equipment.

Chapter 5:
Using the Cabinet

Models 34000 -00 thru -04

Fan/UV Light Switch

The cabinet Fan/UV Light switch is located on the upper front of the cabinet, as shown in Figure 5-1. Turning the switch to the “Fan” position starts the blower, drawing air into through the cabinet. Turning the switch to the “UV On” position will allow the UV light to turn on when the door is closed and the UV Security lock is in the “ON” position.

UV Security Lock

The UV security lock, located to the right of the Fan/UV Light switch, allows the user to lockout the UV, preventing its operation. Before evidence is loaded into the cabinet, it is recommended that the lock be turned to the “OFF” position, and the key removed. This will prevent the accidental activation of the UV light while evidence is drying. The key should be stored in a convenient, secure location, known to all of the users to prevent its loss. Recommended locations include hanging from the bar at the top of the liner, or in the lower storage area.

Filter System Light

The Filter System Light will illuminate if the differential pressure across the filters becomes excessive. If lit, first inspect or replace the two prefilters. If lit with clean prefilters, replace the HEPA filter.

NOTE: If the Filter System Light illuminates during use, finish the drying of the evidence in the cabinet, and then correct the problem before using the cabinet again.

Figure 5-1

Models 3400010

Fan/Drain Pump Switch

The cabinet Fan/Drain Pump switch is located on the upper front of the cabinet, as shown in Figure 5-1a. Turning the switch to the “Fan” position starts the blower, drawing air into through the cabinet. Turning the switch to the “Drain Pump” position starts the drain pump.

Do not operate the pump dry for more than 5 minutes.

Filter System Light

The Filter System Light will illuminate if the differential pressure across the filters becomes excessive. If lit, first inspect or replace the two prefilters. If lit with clean prefilters, replace the HEPA filter.

NOTE: If the Filter System Light illuminates during use, finish the drying of the evidence in the cabinet, and then correct the problem before using the cabinet again.

Figure 5-1a

Shelf Operation

The three drying shelves on the left side wall can be positioned horizontally to dry small pieces of evidence, or swung down, against the left side wall of the liner, if needed. To position the shelves in the up (horizontal) position:

1. Pivot the desired shelf until it is above horizontal (the frame of the shelf is higher than the retaining clip on the back wall of the liner.
2. Push the shelf back all the way.
3. Slowly lower the shelf to a horizontal position, ensuring that the frame of the shelf engages the retaining clip on the back wall of the liner. The shelf is now ready to use.

To fold the shelf down (vertical position):

1. Lift up on the rear frame of the shelf, to release it from the rear retaining clip.
2. Pull the shelf towards the front of the liner.
3. Allow the shelf to swing down into a vertical position.

Drying in the Cabinet

Start-up

Models 34000 -00 thru -04

- Turn off UV light and turn the UV Security switch to “OFF”. Remove the key, and store it in a safe place.

All Models

- Ensure the drain strainer is in place.
- Turn the switch to “Fan”.
- Check the condition of the prefilters and note if the Filter System light is on.
- Wash hands and arms thoroughly with germicidal soap.
- Wear a long sleeved lab coat with knit cuffs and over-the-cuff rubber gloves. Use protective eyewear. Wear a protective mask if appropriate.

Wipe-Down

- Open the door to its full open position.
- Wipe down the interior surfaces of the cabinet with 70% ethanol, or a suitable disinfectant, and allow to dry.
  CAUTION: Do not use bleach on the stainless steel liner. Use disinfectants compatible with stainless steel.

Loading Evidence

- Load the evidence so that air flows around all surfaces of it. Do not overload the cabinet. Do not place objects directly against the side walls.
- Do not obstruct the intake prefilter (bottom of the door) or the exhaust air discharge, on top of the cabinet.
- Large objects should not be placed close together.
- Slowly close the door and use a padlock (not supplied), or secure it with a chain of custody seal.

Unloading Evidence

- Wear a long sleeved lab coat with knit cuffs and over-the-cuff rubber gloves. Use protective eyewear. Wear a protective mask if appropriate.
- Carefully remove objects in the cabinet. Evidence that was considered biohazardous when loaded should be handled as biohazardous.

Models 34000 -00 thru -04

Wipe-Down

- Wear a long sleeved lab coat with knit cuffs and over-the-cuff rubber gloves. Use protective eyewear. Wear a protective mask if appropriate.
- Wipe down the interior surfaces of the cabinet with 70% ethanol, or a suitable disinfectant, and allow to dry.
- Inspect and clean the prefilters at the bottom of the door, and at the top of the liner.
- Dispose of rubber gloves appropriately, and have lab coat laundered properly.
- Wash hands and arms thoroughly with germicidal soap.

Models 3400010

Wash-Down

- Wear a long sleeved lab coat with knit cuffs and over-the-cuff rubber gloves. Use protective eyewear. Wear a protective mask if appropriate.
- Wipe down the interior surfaces of the cabinet with 70% ethanol, or a suitable disinfectant, and allow adequate contact time.
- Turn the cabinet supply valve on, and ensure the spray gun is in the "Shower" position. Turn the switch to "Drain Pump"
- Gently wash down the walls and back of the cabinet's interior, avoiding splashing whenever possible.
- Do not overfill the bottom of the cabinet liner.
- Allow the pump to operate for 30 seconds to 5 minutes after the cabinet liner has drained. Then turn off the pump. Turn the cabinet water shut off valve off.
- Remove and clean out the drain strainer.
- Inspect and clean the prefilters at the bottom of the door, and at the top of the liner.
- Dispose of rubber gloves appropriately, and have lab coat laundered properly.
- Wash hands and arms thoroughly with germicidal soap.

Models 34000 -00 thru -04

Shutdown

- Close the door. If UV disinfection is desired, insert the UV Security Lock Key, and turn it to the "ON" position. Turn the Fan/UV Light switch to "UV". The UV light will light.
- Turn the UV Light off after an appropriate disinfection time, typically 1-8 hours.

Models 3400010

Shutdown

Close the door and push the switch to the center "Off" position.

Chapter 6:
Maintaining the Cabinet

The common service operations necessary to maintain the Evidence Drying cabinet for peak performance are listed below.

Routine Maintenance Schedule

Weekly

- Using 70% ethanol, or a suitable disinfectant, surface disinfect the inside of the cabinet.
- Using an appropriate glass cleaner, or LabSolutions Glass & Surface Wipes, Labconco part # 1570000; clean the door and the surface of the UV lamp.
- Operate the cabinet blower, noting if the Filter System Light turns on.
- Ensure the cabinet water shut off valve is in the off position.

Monthly (or more often as required)

- Using a damp cloth, or LabSolutions Glass & Surface Wipes, Labconco part # 1570000; clean the exterior surfaces of the cabinet, particularly the front and top of the cabinet, to remove any accumulated dust.
- All weekly activities.
- Check the prefilters; replace both if needed.

Annually

- All monthly activities.
- Replace HEPA and granular activated carbon filters.

Service Operations

Door Prefilter Replacement:

1. Pull the prefilter frame straight away from the door, as shown in Figure 6-1.

2. Working from the inside surface of the prefilter frame, pull out the old prefilter, and install its replacement, such that the orange side of the prefilter faces you (away from the front of the prefilter frame).

3. Press the prefilter frame back into the door, engaging the fastener strips.

Figure 6-1

Cabinet Prefilter Replacement:

1. Open the door, and locate the cabinet prefilter frame on the upper right side of the liner.

2. Grasping the front edge of the old prefilter, pull the prefilter out if its frame.

3. Install its replacement, such that the orange side of the prefilter faces up.

Granular Activated Carbon and HEPA Filter Replacement:

1. Use an appropriate stepladder release the two bungee cords securing the granular activated and carbon and HEPA filters, as shown in Figure 6-2.

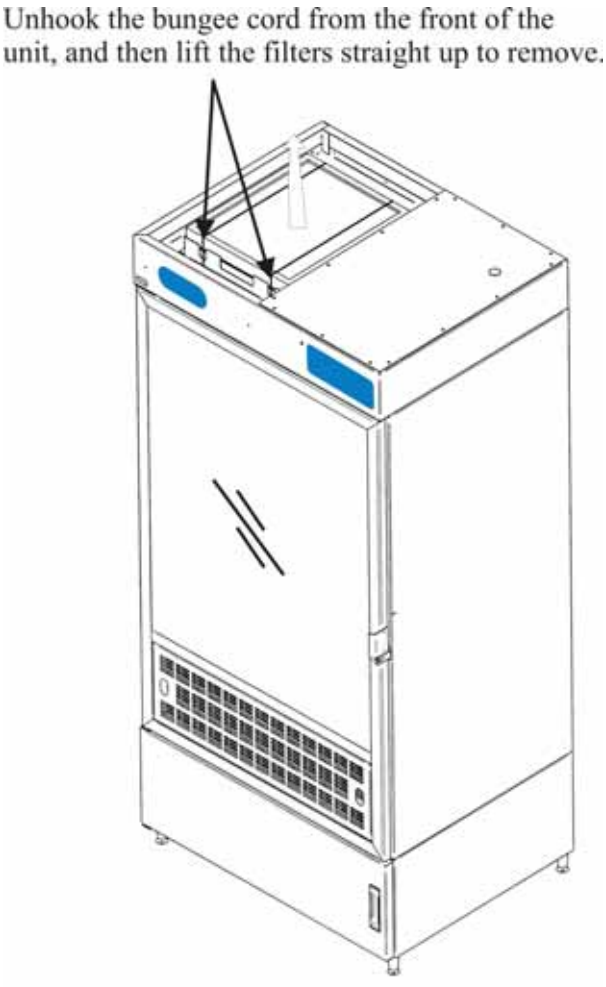
2. When handling used filters or prefilters, always wear appropriate personnel protective equipment.

3. Lift the granular activated carbon and HEPA filters straight up and out of the cabinet top.

4. Install the replacement filters, with the HEPA filter below the granular activated carbon filter into the cabinet. The gaskets on both filters should be on the lower (bottom) surface.

5. Reinstall both bungee cords to secure the filters in place. The unit is now ready to resume operation.

Figure 6-2



Changing the UV Lamp (Models 34000 -00 thru -04):

Note: For optimum performance, the UV lamp should be changed on an annual basis.

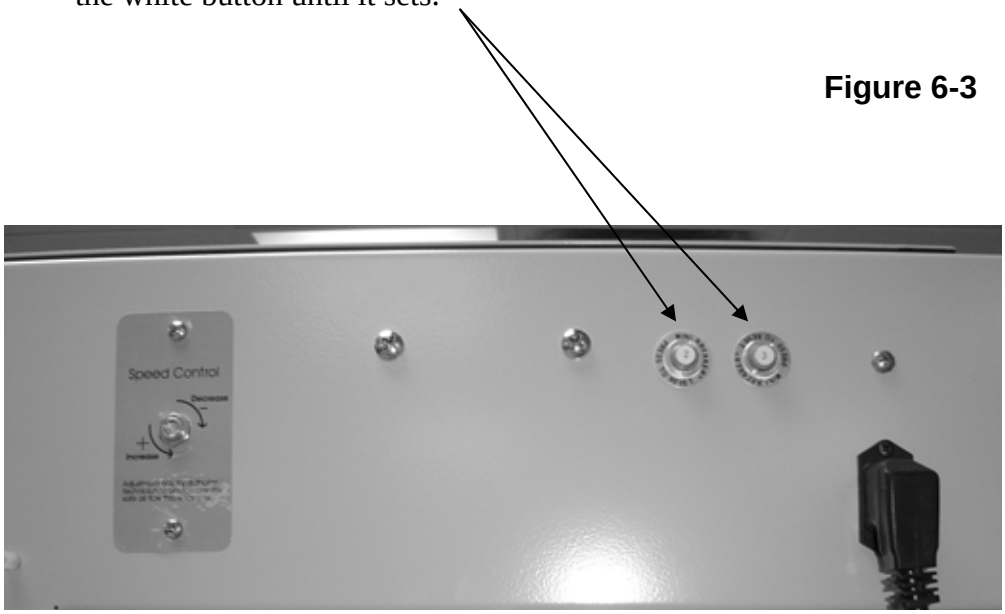
The UV lamp and the work area of the cabinet must be thoroughly decontaminated before removing the lamp.

1. Thoroughly surface decontaminate the UV lamp and the work area of the cabinet.
2. Unplug the cabinet, and open the door.
3. Remove the UV lamp by rotating it 90 degrees and lifting it straight up and out of its sockets.
4. Install new lamp by reversing the removal procedure.

Resetting a Circuit Breaker:

To reset any of the circuit breakers located on the top rear of cabinet, depress the white button until it sets.

Figure 6-3



Setting the Speed Control

Adjustment of the speed control varies the volume of air drawn through the liner while the unit is operating. Ideally, smoke released into the intake prefilter should traverse the liner, and be drawn into the exhaust prefilter in approximately 5 seconds or less.

Using a small screwdriver, adjust the speed control to give the required face velocity. See Figure 6-3 to locate the speed control. The air velocity is increased by turning the speed control counter clockwise and clockwise to decrease velocity.

Chapter 7: Troubleshooting

Refer to the following table if the cabinet fails to operate properly. If the suggested corrective actions do not solve the problem, contact Labconco for additional assistance.

PROBLEM	CAUSE	CORRECTIVE ACTION
Cabinet blower and lights won't turn on	Unit not plugged into outlet	Plug the cabinet into appropriate electrical service.
		Check connection to the top of cabinet.
	Circuit breaker(s) tripped	Reset circuit breakers.
UV light not working	Door is open	Close door – UV light will not work with the door open.
	UV Security Lock not on	The key switch for the UV Security Lock must be turned on.
	Lamp is defective	Replace defective lamp.
	Lamp wiring is disconnected	Inspect lamp wiring.
	Defective lamp ballast	Replace lamp ballast.
UV light is dim or flickering	Lamp is defective or is at end of operating lifetime	Replace defective or worn out lamp.
	Defective lamp ballast	Replace lamp ballast.

PROBLEM	CAUSE	CORRECTIVE ACTION
Filter System Light turns on	Blockage of the intake prefilters	Check the inlet prefilters; replace if needed. Ensure that there is no obstruction of the exhaust on top of the cabinet.
	HEPA filter loading	Replace the HEPA filter.

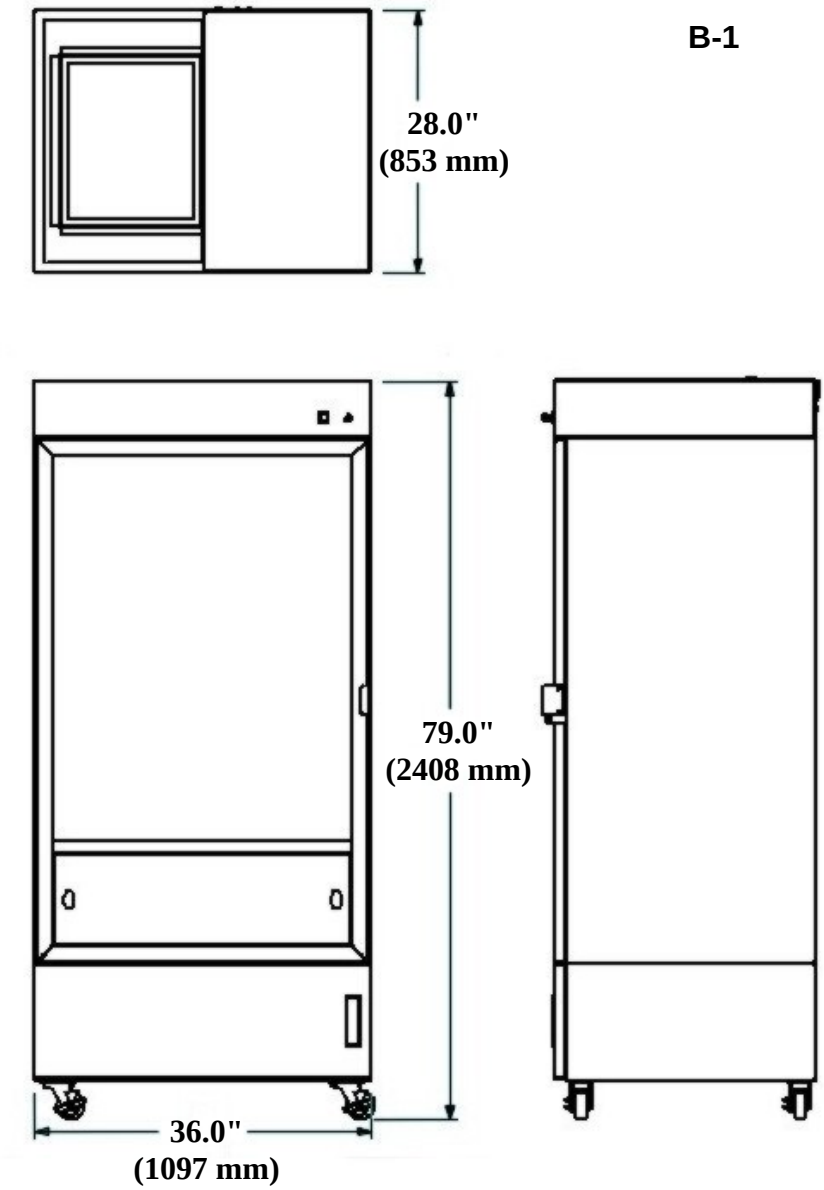
Appendix A: Components

Evidence Drying Cabinet Replacement Parts

Item	Quantity	Part No.	Description
1	1	3872600	Door Prefilter, package of 6
2	1	3872700	Cabinet (top) Prefilter, package of 6
3	1	6938100	HEPA Filter
4	1	6938200	Granular Activated Carbon Filter
5	1	1270100	Lamp, UV

Appendix B: Dimensions

B-1



Interior Dimensions:
56.0" (1422 mm)H x 32.3" (820 mm)W x 26.5" (673 mm)D
Lower Storage Area Dimensions:
12.38" (314 mm)H x 25.5" (648 mm) x 26.5" (673 mm)D

Appendix C: Specifications

Electrical Data

Model #	Requirements	Energy Use
3400000	115 VAC, 60 Hz, 6 Amps	100W
3400001, -2, -3, -4	230 VAC, 50/60 Hz, 3 Amps	100W

Environmental Conditions

- Indoor use only.
- Maximum altitude: 6562 feet (2000 meters).
- Ambient temperature range: 41° to 104°F (5° to 40°C).
- Maximum relative humidity: 80% for temperatures up to 88°F (31°C), decreasing linearly to 50% relative humidity at 104°F (40°C).
- Main supply voltage fluctuations not to exceed ±10% of the nominal voltage.
- Transient overvoltages according to Installation Categories II (Overvoltage Categories per IEC 1010). Temporary voltage spikes on the AC input line that may be as high as 1500V for 115V models and 2500V for 230V models are allowed.
- Used in an environment of Pollution degrees 2 (i.e., where normally only non-conductive atmospheres are present). Occasionally, however, a temporary conductivity caused by condensation must be expected, in accordance with IEC 664.

Appendix D: Accessories

Door Prefilters (# 3872600)

Package of 6 polyester prefilters with a MERV 11 rating. Precut to fit the door of the cabinet. 1 lb. (0.5kg).

Cabinet Prefilters (# 3872700)

Package of 6 polyester prefilters with a MERV 11 rating. Precut to fit the inside top of liner. 1 lb. (0.5kg).

Starter Kit (# 3869900)

Includes many of the accessories needed to use the cabinet. Includes:

- 6-door prefilters
- 6-cabinet prefilters
- 10-hanging clips
- 10-paper liners (die cut paper to fit the bottom of the cabinet) to collect material that falls from evidence. Paper is waxed on one side.
- 1-32 oz. (946 ml) bottle of germicidal cleaner with spray head.

15 lbs. (6.8kg).

Paper Liners (# 3869800)

A tube of 25 paper liners (die cut paper to fit the bottom of the cabinet) to collect material that falls from evidence. Paper is waxed on one side. 10 lbs. (5kg).

Security Tags (# 3902400)

Package of 100 each tamper-evident, labeled tags. Tags irreversibly indicate if the cabinet door has been opened during the drying cycle. 1 lb. (0.5kg).

Hanging Clips (# 3869500)

Package of 10 each hanging clips, that allow small articles to be hung from the cabinet's hanger rod or shelf. 1 lb. (0.5kg).

Exhaust System Connection Kit (# 3869600)

Allows the cabinet to be connected to an exhaust system via the included 14" (356 mm) long, 5" (125 mm) diameter flexible duct. The exhaust system must be capable of exhausting 150 CFM (4.2 m^3/min) at a vacuum of 0.5" of H_2O (125 Pa). 10 lbs. (5kg).

Floor Drain Connection Kit (# 3928200)

Allows the cabinet liner drain connector to be routed to a nearby floor drain. Includes hose barb adaptor and 10 ft. (3 meters) of 1/2” (13 mm) O.D. polyurethane tubing. 5 lbs. (2.3 kg).

Germicidal Cleaner, Individual Wipes (# 3872400)

Package of 100 each individually packaged single use disinfectant wipes. 2 lbs. (1kg).

Germicidal Cleaner, Ready-to-Use Wipes (# 3872501)

Package of 90 ready to use disinfectant wipes, in a convenient dispensing tub. 2 lbs. (1kg).

Germicidal Cleaner, 32 oz. (946 ml) (# 3901801)

Bottle of liquid disinfectant cleaner. Includes a screw-on spray head dispenser. 2 lbs. (1kg).

Germicidal Cleaner, 1 Gal. (3785 ml) (# 3901701)

Bottle of liquid disinfectant cleaner, for refilling the spray bottle. 10 lbs. (5kg).

Protecting your laboratory environment
LABCONCO
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CE Declaration of Conformity

We: Labconco Corporation
8811 Prospect Avenue
Kansas City, MO 64132 USA
Ph. 816-333-8811 Fax. 816-363-0130
labconco@labconco.com

being the representative party in the EU solely responsible for this certification, hereby declare that the following product:

Equipment: Laboratory Equipment – Forensic Enclosures
Type, Model: 3400001, -02, -03, -04 – Protector Evidence Drying Cabinet 230V
3410020, -21, -22, -23, -24, -25, -26, -27 – Protector Downdraft Powder Station 230V
3420020, -22, -24, -26 – CApture Portable Fuming System 230V
Manufacturer: Labconco Corporation
8811 Prospect Avenue
Kansas City, MO 64132 USA
Ph. 816-333-8811 Fax. 816-363-0130
labconco@labconco.com

is in conformity with the standards listed below:

EN61010-1
EN61326-1
EN55022
EN61000-3-2/3

following the provisions of the following directives:

2006/95/EC
89/336/EEC
2004/108/EC

when installed and operated in accordance with the manufacturers installation and operating instructions.

Kansas City 11-16-2010
Place and date of issue

Mark Schmitz
Vice President, Research and Engineering
Labconco Corporation

Labconco P/N 3696073, Rev. C